Application No.: 10/675,020 17510 DIV1 (BOT)

Donovan, S., Transdermal Patch for Botulinum Toxin Administration

## **AMENDMENTS**

## Amendments to the Claims

1-15. (Cancelled)

- 16. (Currently amended) A transdermal patch, comprising a pharmaceutical composition, which comprises:
  - a) a pharmaceutical composition comprising
    - i) a stabilized botulinum toxin provided in a dried state; and
    - <u>ii)</u> an enhancing agent that is mixable with the stabilized botulinum toxin provided in a dried state and facilitates transdermal administration of a botulinum toxin in a bioactive form to a subdermal target site of a human patient without being administered to the patient's circulatory system; and
  - <u>b)</u> an adhesive <u>layer</u> disposed to one side of the transdermal patch to removably secure the patch on the patient's skin;

wherein the pharmaceutical composition is incorporated into the adhesive layer; and

wherein upon contacting with a fluid, the fluid solubilizes the pharmaceutical composition, thereby permitting diffusion of the pharmaceutical composition from the adhesive layer.

- 17. (Currently amended) The transdermal patch of claim 16, wherein the adhesive <u>layer</u> is disposed around a depot containing the pharmaceutical composition.
- 18. (Original) The transdermal patch of claim 16, further comprising a plurality of needles extending from one side of the patch that is applied to the skin, wherein the needles

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extend from the patch to project through the stratum corneum of the skin without rupturing a blood vessel.

- 19. (Original) The transdermal patch of claim 18, wherein the botulinum toxin is provided a depot in the patch so that pressure applied to the patch causes botulinum toxin to be directed through the needles and under the stratum corneum.
- 20. (Currently amended) The A transdermal patch of claim 16, wherein the botulinum toxin in the dried state is provided in a dry state in a plurality of wells, each of the wells covered by a membrane that is dissolvable with a fluid, and wherein the enhancing agent mixes with the botulinum toxin as the membrane over a well dissolves so that the absorption of the botulinum toxin is enhanced comprising:
  - a) a depot comprising a plurality of wells covered by a membrane, the wells containing a pharmaceutical composition comprising
    - i) a stabilized botulinum toxin provided in a dried state; and
    - ii) an enhancing agent that is mixable with the stabilized botulinum toxin provided in a dried state and facilitates transdermal administration of a botulinum toxin in a bioactive form to a subdermal target site of a human patient without being administered to the patient's circulatory system; and
  - b) an adhesive layer disposed to one side of the transdermal patch to removably secure the patch on the patient's skin;
    - wherein upon contacting with a fluid, the membrane covering the wells dissolves and the fluid solubilizes the pharmaceutical composition, thereby permitting diffusion of the pharmaceutical composition from the well.
- 21. (Original) The transdermal patch of claim 16, wherein the botulinum toxin is botulinum toxin type A.

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22-35. (Cancelled)

36. (Previously presented) The transdermal patch of claim 16, wherein the enhancing agent comprises 1 part water, 1 part ethanol, and 1 part polyethylene glycol.

- 37. (Previously presented) The trasdermal patch of claim 36 wherein the ethanol is 90% ethanol.
- 38. (Previously presented) The transdermal patch of claim 16, wherein the enhancing agent comprises 1 part of 10% transfersomes and 0.9 part of a buffer.
- 39. (Currently amended) A transdermal patch, comprising a pharmaceutical composition, which comprises:
  - a) a pharmaceutical composition comprising
    - i) a stabilized botulinum toxin provided in a dried state; and
    - <u>ii)</u> an enhancing agent that is mixable with the stabilized botulinum toxin provided in a dried state and facilitates transdermal administration of the botulinum toxin in a bioactive form to a subdermal target site of a human patient; and
  - <u>b)</u> an adhesive <u>layer</u> disposed on one side of the transdermal patch to removably secure the patch on the patient's skin.

wherein the pharmaceutical composition is incorporated into the adhesive layer; and

wherein upon contacting with a fluid, the fluid solubilizes the pharmaceutical composition, thereby permitting diffusion of the pharmaceutical composition from the adhesive layer.

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40. (Previously presented) The transdermal patch of claim 39, wherein less than 25% of the administered botulinum toxin permeates into a blood vessel.

- 41. (Previously presented) The transdermal patch of claim 39, wherein the enhancing agent comprises 1 part water, 1 part ethanol, and 1 part polyethylene glycol.
- 42. (Previously presented) The transdermal patch of claim 39 wherein the ethanol is 90% ethanol.
- 43. (Previously presented) The transdermal patch of claim 39, wherein the enhancing agent comprises 1 part of 10% transfersomes and 0.9 part of a buffer.
- 44. (Previously presented) The transdermal patch of claim 39, wherein the botulinum toxin is botulinum toxin type A.
- 45. (New) The transdermal patch of claim 20, wherein the botulinum toxin is botulinum toxin type A.